

whereby heat energy is conductively transferred from said heated liquid through said body to said oil means of lowering said oil viscosity and provides an enlarged means for said oil to be atomized and incinerated with said multi oil burner.

26. The device of claim 25 wherein said body further includes a nozzle means of atomizing said oil operatively connected to said body and said oil passageway.

27. The device of claim 25 wherein said body further includes an air passageway means of conveying compressed air through said body and provides an enlarged means of utilizing an air atomizing nozzle, versus a high pressure atomizing nozzle, for spraying and atomizing said oil.

28. The oil preheat device of claim 25 wherein said body is constructed of material having a predetermined cross sectional shape and length causing it to be of sufficient capacity as need be to properly operate in various applications.

29. The oil preheat device of claim 25 further including an oil pump means of communicating said oil from its source to said oil passageway of said body.

30. The oil preheat device of claim 25 further including a liquid pump means of communicating said heated liquid from its source to said liquid passageway of said body.

31. A method of preheating oil for a multi oil burner, comprising the steps of;

providing a source of oil, and

providing a heated liquid, and

communicating said heated liquid through a liquid passageway within a body made of thermally conductive material, and

communicating said oil through an oil passageway within said body made of thermally conductive material,

whereby heat energy is conductively transferred from said heated liquid through said body to said oil causing said oil to be heated and lowered in viscosity providing an enlarged means for said oil to be atomized and incinerated with said multi oil burner.

REMARKS—General

By the above amendment, Applicant has amended the title and abstract to emphasize the novelty of the invention.

Also, Applicant has rewritten all claims to define the invention more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior art.

The objection to rejection of claims 1, 3, 4, 7, 9, 11, 12, 15, 17, 19, and 20 under 35 U.S.C. 102(b) on U.S. Patent number 2,976,918 to "Leach", on O.A. page 2, numbers 2. & 3. are overcome.

The preamble to independent claims 1, 9, and 20 stated the device is part of a "combustion system". Applicant has narrowed these claims, title and abstract by changing the preamble of these claims to state that the device is part of a "multi oil burner" versus a "combustion system" to define patentability over this reference. Applicant has changed independent claim 1 preamble which stated: "A device for preheating oil in a combustion system", to independent claim 21 which preamble states: "A device for preheating oil for a multi oil burner". Applicant has changed independent claim 9 preamble which stated: "An oil preheat device for a combustion system", to independent claim 25 which preamble states: "An oil preheat device for a multi oil burner". Applicant has changed independent claim 20 preamble which states: "A method of preheating oil in a combustion system" to independent claim 31 which preamble states: "A method of preheating oil for a multi oil burner". Dependent claims 3, 7, 8, 11, 17, and 19 have been discontinued. Dependent claims 4, 12, and 15, have been changed accordingly to suit the respective independent claims to define patentability over the prior art reference in light of the above. Dependent claim 4 has been rewritten as dependent claim 24. Dependent claim 12 has been rewritten as dependent claim 28. Dependent claim 15 has been rewritten as dependent claim 29. Applicant requests reconsideration of this rejection in consideration of the new claims and for the following reasons.

Leach discloses a preheater specifically for fuel oil. Leach's claims specify "fuel oil". There is no mention of this invention being used for "waste oil". There is a major difference in the way virgin fuel oil and waste oil is preheated for combustion. Fuel oil can be effectively burned at temperatures as low as 20°F to as high as 275°F. Waste oil, as explained in U.S. Patent 5,879,149 to Briggs et al. and U.S. Patent 5,341,832 to Foust, has a very close temperature range, 150°F to 170°F, at which the oil must be at the nozzle, prior to ejection, in order to atomize, ignite and burn. This is why "waste oil" or "multi oil" burners heat the oil at or in the burner. "Waste oil" or "multi oil" burner's preheat devices are located directly behind the nozzle to which the nozzle is attached in order to maintain oil ejection temperatures at 150°F to 170°F.

"Multi oil burners" are capable of burning both virgin fuel oils and spent waste oils. Recited by Applicants specification, U.S. Patent 5,551,868 to Smoker et al., titled "Preheater Block For Multi Oil Furnacs" describes in great detail that a "multi oil burner" is capable of burning waste oils and also virgin fuel oils. Fuel oil preheat devices are external to burners and do not have a nozzle attached to them. Recited in Applicant's Specification, U.S. Patent 5,879,149 to Briggs et al. demonstrates how important it is that the waste oil is hot behind the nozzle by Fig.3 which shows an oil heater 18 which is mounted external to a burner with a second oil heater 76 located inside the burner to maintain hot oil behind the nozzle. "Fuel oil combustion systems" merely need to have the oil heated from cold storage in order to filter and pump it to a burner where it is atomized and burned with out further preheating at or inside the burner. Leach describes in the second paragraph of his specification how his invention improves the "oil flow to a burner" over his prior art. Leach mentions nothing about preheating the oil at or in the burner for actual combustion. Leach's abstract states that the invention is a "fuel conditioning unit". Leach's abstract states: "the fuel is filtered and pumped away to the burners..."

If Leach's invention were used with waste oil, the waste oil would cool too much prior to reaching the burner nozzle and would not burn. Or, the oil would have to be over heated so hot using Leach's invention that the cooling would be compensated for prior to reaching the burner. Waste oils, as explained in all of the recited references in Applicants specification, will carbonize and solidify at temperatures as low as 180°F. This overheating to compensate for cooling of oil to the burner would cause waste oil to carbonize inside Leach's invention creating the problems explained and overcome in Applicants specification. Also, at start up, the idle waste oil from the nozzle to Leach's invention would not be heated at all and therefore would not fire and shut down.

Leach's invention is one component of a "fuel oil combustion system". Leach discloses in the second paragraph that the purpose of this invention is to heat cold thick oil so that it can be filtered and pumped **to a burner. The burner is yet another component of a "fuel oil combustion system"**. Leach's invention is "external" to a burner and mentions nothing about preheating oil for "combustion" at or in a burner.

Applicant's preheat device used with a burner for preheating oil at the nozzle using a heated liquid is new. Applicants invention presents novel, unexpected results and advantages over the prior art as is described in applicants specification paragraphs 23 through 26.

Since the claims define novel structure that produces new and unexpected results, applicant submits that the amended claims do comply with 35 U.S.C. 102(b) and therefore requests withdrawal of this objection.

The rejection of Claims 2, 5, 6, 8, 10, 13, 14, 16, and 18 under 35 U.S.C. 103(a) as being unpatentable over Leach in view of U.S. Patent No. 4,797,089 to Schubach on O.A. page 3 & 4, number 5 are overcome.

The last O.A. rejected dependent claims 2, 5, 6, 8, 10, 13, 14, 16, and 18 as applied to independent claims 1 and 9 “in view of Schubach”. As stated above, the claims have been amended to more accurately and explicitly claim the invention as part of a “multi oil burner” versus a broader “combustion system” to define patentability over these references, and any combination thereof. Dependent claims 3, 7, 8, 11, 17, and 19 have been discontinued. Dependent claims 4, 12, and 15, have been changed accordingly to suit the respective independent claims 21 and 25 to define patentability over the prior art reference in light of the above. Dependent claim 4 has been rewritten as dependent claim 24. Dependent claim 12 has been rewritten as dependent claim 28. Dependent claim 15 has been rewritten as dependent claim 29. Applicant requests reconsideration of this rejection, as now applicable to the new amended claims for the following reasons.

There is no justification, in Leach or Schubach, or in any other prior art separate from Applicant’s disclosure, which suggests that these references be combined, much less be combined in the manner proposed. NO WHERE in Schubach’s patent does he mention the use or even the possibility of using a heated liquid in place of his electric heater in the specification or claims. NO WHERE in Leach’s patent does he mention the possibility of preheating waste oil. NO WHERE in Leach’s patent does he mention preheating oil for the purpose of combustion, rather it specifically states preheating for the purpose “conditioning oil” for filtration and pumping purposes.

Each reference is individually complete and functional in itself, so there would be no reason to use parts from or add or substitute parts to any reference. Leach teaches that an adjacent electrical heater had disadvantages, which “teaches away” from the implied combination thereof.

Leach discloses a preheater specifically for “fuel oil” in both the specification and the claims. Schubach discloses a preheater specifically for “waste oil” in the specification

and claims. This is nonanalogous art. Schubach's device does not show any ports or passageways that would support the use of using Leach's heated liquid as suggested by O.A.

With regard to the proposed combination of Leach and Schubach, it is well known that in order for any prior art references themselves to be validly combined for use in a prior art 103 rejection, the references themselves (or some other prior art) must suggest that they be combined. E.g., as was stated in In re Sernaker, 217 U.S.P.Q. 1, 6 (C.A.F.C. 1983):

“Prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings.”

That the suggestion to combine the references should not come from applicant was forcefully stated in Orthopedic Equipment Co. v. United States, 217 U.S.P.Q. 193, 199 (CAFC 1983):

“It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the result of the claims in suit [here the claims pending]. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law [here the PTO].”

As was further stated in Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q. 2d 1434 (CAFC 1988), “(w)here prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself... Something in the prior art must suggest the desirability and thus the obviousness of making the combination.”

In line with these decisions, the Board stated in Ex parte Levengood, 28 U.S.P.Q. 2d 1300 (P.T.O.B.A.&I. 1993):

“In order to establish a prima facie case of obviousness, it is necessary for the examiner to present evidence, preferably in the form of some teaching, suggestion, incentive or inference in the applied art, or in the form of generally available knowledge, that one having ordinary skill in the art would have been led to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention... That which is within the capabilities of one skilled in the art is not synonymous with obviousness... That one can reconstruct and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make the claimed invention.... Our reviewing courts have often advised the Patent and Trademark Office that it can satisfy the burden of establishing a prima facie case of obviousness only by showing some objective teaching in either prior art, or knowledge generally available to one of ordinary skill in the art, that would lead that individual to combine the relevant teachings of the references... Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done.”

In the present case, there is no reason given in the last O.A. to support the proposed combination. The O.A. noted (p.3 &4) that the combination of Leach and Schubach produces an advantage (being able to uniformly heat the oil). Applicant submits that the fact that the combination produces advantages militates in favor of applicants because it proves that the combination produces new and unexpected results and hence is unobvious.

As stated in the above Levengood case,

“That one can reconstruct and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make the claimed invention.”

Applicant therefore submits that combining Leach and Schubach is not legally justified and is therefore improper. Thus Applicant submits that the rejection on these references is also improper and should be withdrawn.

Applicant respectfully requests, if the claims are again rejected upon any combination of references, that the Examiner include an explanation, in accordance with M.P.E.P. 706.02, Ex parte Clapp, 27 U.S.P.Q. 972 (P.O.B.A. 1985), and Ex Parte Levengood, supra, a “factual basis to support his conclusion that it would have been obvious” to make the combination.

Applicant has reviewed the prior art made of record but relied upon, and states that it does not show Applicant’s invention or render it obvious.

Conclusion

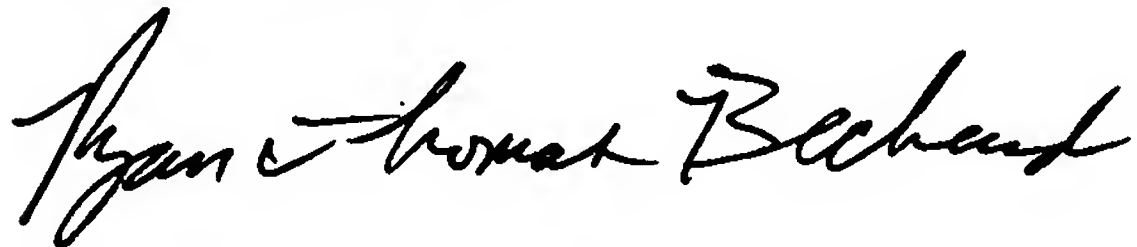
For all the above reasons, applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore Applicant submits that this application is now in condition for allowance, which action Applicant respectfully solicits.

Conditional Request For Constructive Assistance

Applicant has amended the Title, Abstract, Specification and Claims so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason

this application is not believed to be in full condition for allowance, Applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. 2173.02 and 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very Respectfully,



Ryan Thomas Bechard.

____ Applicant Pro Se _____

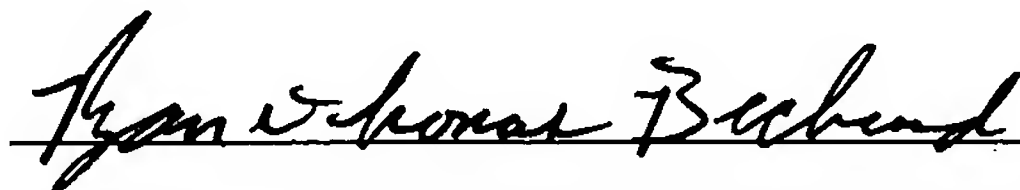
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2005, May 16



Ryan Thomas Bechard, Applicant